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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,957	11/17/2003	Jiro Moriyama	CFA00047US	4447
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IRVINE, CA 92618-3731				
EXAMINER				
GARCIA JR, REIN				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/715,957

Applicant(s)

MORIYAMA ET AL.

Examiner

RENE GARCIA JR

Art Unit

2853

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Drawings

1. The drawings are objected to because figure 6 lacks the inclusion of Bk2 data used in step S14 as described in the specification at paragraph 0042.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "...dots are recorded on virtual lattice points of the recording medium" (see 112 rejection for further details) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for teaching an image processing unit configured to create a first data and a second data, does not reasonably provide enablement for the recording apparatus providing this functionality. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Specifically the prior claims filed related to a recording apparatus (and method of similar limitations) where the recording apparatus performed the recording aspect, and not the creation of data as claimed in claim 27. The related method claim 32 maintains this respect, thus not rejected under 35 USC §.112 1st. The specification fails to teach the new claim limitations of claim 27, and provides contradicting teaching. Paragraphs: 0021, 0026, 0033, 0034, 0035, 0036, 0037 provided the most relevant information regarding this aspect of the claim language. Paragraph 0021 teaches that, ***"Record data of characters and images to be recorded is transmitted to the recording apparatus 100 from a host device 500, and the data is stored in a receive buffer 401"***, the

host device not the recording apparatus does the processing. This is further supported in paragraph 0026 (emphasis added):

The **host computer 500 includes a CPU 202**, a memory 203, an external storage 204, an input portion 205, and an interface 206 between the host computer 500 and the recording apparatus 100. The **CPU 202 performs various types of processing** according to programs stored in the memory 203. For example, processing for preparing and editing an image including characters is performed according to a user input from the input portion 205. For recording such an image, image processing such as color conversion is **performed by a printer driver**, which is one of the programs, **to prepare data used in the recording apparatus 100**. Specifically, R, G, and B data of the **prepared and edited image are subjected to predetermined image processing, such as color conversion, output gamma correction, and quantization (binarization), to yield C, M, and Y binary data**. **In this data processing, binary data for the carbon Bk ink for recording a black spot pattern**, described later with reference to FIG. 4, is obtained. The **host computer 500, which is connected to the recording apparatus 100 through the interface 206, transmits recording data obtained by the image processing to the recording apparatus 100 to perform recording**.

The CPU of the host computer/host device/ in conjunction with the printer driver, prepares the data to be printed, and then transmits to the data to the recording apparatus. Paragraphs 0033 – 0037, outline the steps leading up to performing the function of the method described in claim 32. Specifically it is taught that: "...start process using a personal computer (PC) being the host device 500 of the recording apparatus 100..." (paragraph 0033); paragraph 0035 goes on to show that: "...Bk record data and the Y, M, and C record data are synthesized in Step S5. This **synthesis is simply performed by transmitting the Y, M, C, and Bk record data to respective print buffers, as in a conventional recording system**." The specification fails to teach that the recording apparatus including an image processing unit performing the function as claimed, but teaches where a host device/computer/ does provide this functionality.

4. Claims 29 and 34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for black spots being recorded on the recording medium with reference to assumed lattice points (virtual lattice points), does not reasonably provide enablement for the dots being recorded on virtual lattice points. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The specification provides details that teach away from the claim language, page 11, paragraph 0029 and figure 4, teach that there are four recording positions: U, D, R, L - above, below, right, left of the lattice point respectfully. The standard definition of lattice point (point at the intersection of two or more grid lines in a point lattice) is different than the defined usage in the specification. The claim language records the dot **on the virtual lattice point** while the specification records the dot relative ("...black spot is provided at the vicinity of each of lattice points...") to the virtual lattice point not **on** it, therefore lacking the teaching for the claim limitation.

5. Claims 30 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim provides limitation for utilizing a first recording head including a first black ink and a second recording head including cyan, magenta, yellow and second black ink. The specification provides support for a two types of Bk ink-discharging recording heads (page 16 paragraph 0040, 0041; with regards to a second

embodiment) and the specification also teaches, with regards to a first embodiment, the ink jet recording apparatus/100/ with a carriage/101/ holding a recording head/104/ (pages 6-8; paragraphs 0018-0020). The specification fails to teach the use of at least two recording heads at the same time to produce the image (consisting of first and second recording data) as disclosed. The carriage lacks the capability to hold more than one recording head, as would be required to print an image consisting of the first black ink, cyan, magenta, yellow and second black ink at the same time, limitation of claims 30 and 35. Paragraphs 0040-0044 outline the steps to produce an image and clearly teach that both recording heads are utilized at the same time in the recording apparatus. Other than (paragraph 0040) stating that use of two types of Bk ink-discharging recording heads, there is no structure taught to overcome the lack of support of the carriage/101/ to hold an additional recording head, as needed to perform the functionality.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 27-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. (US PGPUB 2002/0080396) in view of Tan et al. (US 6,613,403) and Brouhon et al. (US 6,962,450).

Silverbrook et al. disclose the following:

*regarding claims 27, 32, recording apparatus **/netpage printer, 601/** (fig. 11) and method for forming an image on a recording medium/**netpage, 1/** (fig. 1; paragraph 0216 see also paragraphs 0148 and 0218), comprising:

*image processing unit/**printer controller; RIP DSPs, 757/** (Fig. 14; ¶0552, 0554, 0562-0567) configured to create a first recording data/**coded data,3/** (fig. 1; ¶0129, 0565 – coded data/3/ [invisible ink] is the IR layer being processed) by reading pattern data for recording positional information representing positions (¶0158; x & y coordinates) on a recording medium/**1/** and to create a second recording data/**graphic data, 2/** (fig. 1; ¶0129) by reading recording data for recording an image

*recording control unit/**print engine controllers, 760/** (fig. 14; ¶0554) configured to record the positional information image/**coded data, 3/** and the image/**graphic data, 2/** concurrently based on the first and second recording data (¶0129, 0554)

*wherein a first black ink/**infrared inks, IR-absorptive black ink/** detectable by a predetermined detector/**netpage pen, 101/** (figs. 8 & 9; paragraph 0255) is used to record the positional information image/**3/** and cyan ink, magenta ink, yellow ink, and a second black ink (paragraph 0243; cyan, magenta, yellow, black), which are undetectable by the predetermined detector/**netpage pen, 101/** (paragraph 0151 – cyan, magenta, yellow, black are non-infrared emitting), are used to record the image

*regarding claims 28 and 33, positional information image/**coded data, 3/** represents positions on the recording medium/**1/** by combining positions of a plurality of spots recorded on the recording medium/**1/** (figs. 6a, 6b & 6c)

*regarding claims 31 and 36, first black ink is a carbon ink (paragraphs 0584 – 0592; infrared dyes/ink/ contain carbon atoms)

*regarding claim 37, computer-readable storage medium storing computer-executable process steps, the computer-readable process steps causing a computer to execute the method of claim 32 (flash memory/658/; fig. 14; ¶0556)

Silverbrook et al. does not disclose the following claimed limitations:

*regarding claims 29 and 34, dots are recorded on virtual lattice points of the recording medium

*regarding claims 30 and 35, first black ink is recorded using a first recording head and the cyan ink, magenta ink, yellow ink, and second black ink are recorded using a second recording head

*regarding claims 31 and 36, cyan ink, magenta ink, yellow ink, and second black ink are carbon- free inks

*Silverbrook et al. does teach utilize color inks however does not expressly specify which recording material composition to utilize

Silverbrook et al. teaches the following:

*regarding claims 30 and 35, the use of six colors for printing; including Black, Cyan, Magenta, Yellow and IR-Absorptive Black ink (carbon) (¶¶0223, 0243, 0252, 0520; fig. 54) wherein the six colors are ejected via a single printhead with multiple rows or interdigitated printing elements instead of two separate heads

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize more than one head to provide first black ink, cyan ink, magenta ink, yellow ink, and second black ink since it is known in the art to provide different printhead cartridges for different configurations, or where an array of print elements is distributed via multiple sub-printheads to makeup the whole.

Brouhon et al. discloses the following:

*regarding claims 29 and 34, dots are recorded on virtual lattice points of the recording medium (fig. 2; col. 5, lines 22-45; background information - col. 1, lines 21-39, lines 51-56, lines 61-67, col. 2, lines 1-11)

Silverbrook et al. and Brouhon et al. are analogous art because they are directed to a similar problem solving area of position identifying patterns utilized in conjunction with a primary image.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize dots are recorded on virtual lattice points of the recording medium as taught by Brouhon et al. into Silverbrook et al. for the purpose position identifying of a secondary image.

Tan et al. discloses the following:

*regarding claims 31 and 36, cyan ink, magenta ink, yellow ink, and second black ink are carbon- free inks (col. 9, lines 10-24, particularly line 20) for the purpose of ink detection and lack of detection based on specific properties (infrared detection).

Silverbrook et al. and Tan et al. are analogous art because they are directed to a similar problem solving area of recording material/~~ink~~/ detection and recording material lack of detection.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize cyan ink, magenta ink, yellow ink, and second black ink are carbon- free inks as taught by Tan et al. into Silverbrook et al. for the purpose of ink detection and lack of detection based on specific properties (infrared detection).

Response to Arguments

Applicant's arguments filed 06/17/08 have been fully considered but they are not persuasive.

The applicant on page 9 argues that "nothing in Silverbrook is seen to describe at least the present invention's feature of creating a first recording data by reading pattern data for recording positional information image and creating a second recording data by reading recording data for recording an image and recording the positional information image and the image concurrently based on the first and second recording data." Applicant is directed to paragraphs 0216-00226 where it is taught that page layouts and actual texts and image objects are distributed to the printer for processing via the printer controller and (paragraphs 0552-00567)

The applicant argues on page 10 that “nothing in Silverbrook is seen to indicate that an individual tag or combination of tags forms or form a positional information image. In other words, there is nothing in Silverbrook to suggest that the tags form an image representing positional information on the recording medium when the tags are recorded on the recording medium.” Applicant is directed to figure 5a and paragraphs 0164-0173 where it teaches the physical structure for the tag, specifically how they are produced on the medium to aid in distinguishing location relative to a known position.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Communication with the USPTO

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RENE GARCIA JR whose telephone number is (571)272-5980. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. G./
Examiner, Art Unit 2853

/Stephen D Meier/
Supervisory Patent Examiner, Art Unit 2853